

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

EON CORP IP HOLDINGS LLC,  
Plaintiff,

v.

APPLE INC.,  
Defendant.

Case No. [14-cv-05511-WHO](#)

**CLAIM CONSTRUCTION ORDER**

**BACKGROUND**

The parties ask me to construe ten terms from the two patents asserted in this case. The patents in suit relate to wireless communication systems designed to enable two-way communications between a network and an individual subscriber unit, such as a cell phone.

The '101 Patent (Patent Number 5,388,101, issued Feb 7, 1995) is titled "Interactive nationwide data service communication system for stationary and mobile battery operated subscriber units." The '101 Patent describes a wireless system wherein portable subscriber units can communicate with a network while moving through geographical zones.

The '491 Patent (Patent Number 5,592,491, issued Jan 7, 1997) is titled "Wireless modem." The '491 Patent is a continuation-in-part of the '101 Patent. The system claimed by the '491 Patent broadly operates by determining whether "Path A," typically a cellular network connection, is impaired such that a subscriber unit cannot communicate with the network. *See* '491 Patent at 2:14-41. If it is, the system communicates using "Path B," typically a wireless or Wi-Fi network connection, via a modem.

**LEGAL STANDARD**

**I. CLAIM CONSTRUCTION GENERALLY**

Claim construction is a matter of law. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Terms contained in claims are "generally given their ordinary and customary meaning." *Vitronics*,

90 F.3d at 1582. In determining the proper construction of a claim, a court begins with the intrinsic evidence of record, consisting of the claim language, the patent specification, and, if in evidence, the prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005); see also *Vitronics*, 90 F.3d at 1582. “A claim term used in multiple claims should be construed consistently . . . .” *Inverness Med. Switzerland GmbH v. Princeton Biomeditech Corp.*, 309 F.3d 1365, 1371 (Fed. Cir. 2002).

“The appropriate starting point . . . is always with the language of the asserted claim itself.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1312. “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

“Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313. “Claims speak to those skilled in the art,” but “[w]hen the meaning of words in a claim is in dispute, the specification and prosecution history can provide relevant information about the scope and meaning of the claim.” *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994) (citations omitted). “[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Vitronics*, 90 F.3d at 1582. “However, claims are not to be interpreted by adding limitations appearing only in the specification.” *Id.* “Thus, although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.” *Id.* Conversely, “where [ ] the claim language is unambiguous, [the Federal Circuit has] construed the claims to exclude all disclosed embodiments.” *Lucent Techs., Inc. v. Gateway, Inc.*, 525 F.3d 1200, 1215-

1 16 (Fed. Cir. 2008). “[T]he description may act as a sort of dictionary, which explains the  
2 invention and may define terms used in the claims,” and the “patentee is free to be his own  
3 lexicographer,” but “any special definition given to a word must be clearly defined in the  
4 specification.” *Markman*, 517 U.S. at 989-90.

5 On the other hand, it is a fundamental rule that “claims must be construed so as to be  
6 consistent with the specification.” *Phillips*, 415 F.3d at 1316. “The construction that stays true to  
7 the claim language and most naturally aligns with the patent’s description of the invention will be,  
8 in the end, the correct construction.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d  
9 1243, 1250 (Fed. Cir. 1998).

10 Finally, the court may consider the prosecution history of the patent, if in evidence.  
11 *Markman*, 52 F.3d at 980. The prosecution history may “inform the meaning of the claim  
12 language by demonstrating how the inventor understood the invention and whether the inventor  
13 limited the invention in the course of prosecution, making the claim scope narrower than it would  
14 otherwise be.” *Phillips*, 415 F.3d at 1317 (citing *Vitronics*, 90 F.3d at 1582-83); *see also Chimie*  
15 *v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) (“The purpose of consulting the  
16 prosecution history in construing a claim is to exclude any interpretation that was disclaimed  
17 during prosecution.”) (internal quotations omitted).

18 In most situations, analysis of this intrinsic evidence alone will resolve claim construction  
19 disputes. *Vitronics*, 90 F.3d at 1583. However, “it is entirely appropriate . . . for a court to consult  
20 trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent  
21 file is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in  
22 the pertinent technical field.” *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309  
23 (Fed. Cir. 1999). Extrinsic evidence “consists of all evidence external to the patent and  
24 prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.”  
25 *Markman*, 52 F.3d at 980. All extrinsic evidence should be evaluated in light of the intrinsic  
26 evidence, *Phillips*, 415 F.3d at 1319, and courts should not rely on extrinsic evidence in claim  
27 construction to contradict the meaning of claims discernible from examination of the claims, the  
28 written description, and the prosecution history, *Pitney Bowes*, 182 F.3d at 1308 (citing *Vitronics*,

90 F.3d at 1583). While extrinsic evidence may guide the meaning of a claim term, such evidence is less reliable than intrinsic evidence. *Phillips*, 415 F.3d at 1318-19.

## II. *SENSUS* LITIGATION

In a prior case brought by EON, the Hon. Jon S. Tigar of this District construed terms from the '491 patent. *Eon Corp. IP Holdings LLC v. Aruba Networks Inc.*, 62 F. Supp. 3d 942 (N.D. Cal. March 5, 2014) (*Sensus*). In ruling on the *Sensus* defendants' motion for summary judgment, Judge Tigar further construed claims from the '491 patent. *EON Corp IP Holdings LLC v. Cisco Sys. Inc.*, 36 F. Supp. 3d 912 (N.D. Cal. April 1, 2014) (*Sensus II*). He granted defendants' motion for summary judgment and his decision was affirmed on appeal by the Federal Circuit. *Id.*, *aff'd sub nom. EON Corp. IP Holdings LLC v. Cisco Sys., Inc.*, 595 F. App'x 991 (Fed. Cir. 2015). In this case, I have already determined that Judge Tigar's summary judgment determinations in *Sensus II* collaterally estop EON from relitigating the same issues here. August 17, 2015 Order (Dkt. No. 130). With respect to claim construction, collateral estoppel likewise will apply against EON (but not Apple)<sup>1</sup> to constructions made by Judge Tigar that Apple argues should be adopted here. Even if collateral estoppel did not apply, I consider Judge Tigar's constructions persuasive and absent a showing that it would be erroneous to adopt them in this case, I will follow them.

## DISCUSSION

As an initial matter, the parties agree to the following constructions:

"An interactive video data system comprising," as used in the preamble of claim 19 of the '101 Patent, is not limiting.

The term "modem," as used in claims 13 and 17 of the '491 Patent, is defined as: "a device that modulates an analog carrier signal to encode digital information, and demodulates such a carrier signal to decode the transmitted digital information."

The term "multiplexed," as used in claim 13 of the '491 Patent, is defined as: "combined messages transmitted over a single channel."

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<sup>1</sup> *W. v. Quality Gold, Inc.*, No. 5:10-CV-03124-JF HRL, 2011 WL 6055424, at \*2 (N.D. Cal. Sept. 16, 2011) (noting collateral estoppel can only be applied in the claim construction context against a party who was a party in the prior proceeding).

The term “synchronously related,” as used in claim 13 of the ‘491 Patent, is defined as: “related in time.”

# **I. ‘491 PATENT**

## **A. “network hub switching center”**

As used in claim 13:

A two-way communication system comprising:

...

**a network hub switching center** for routing communications from and to said at least one subscriber unit, and

....

<b>Patent/Term</b>	<b><i>Sensus</i></b>	<b>EON’s Proposal</b>	<b>Apple’s Proposal</b>
“a network hub switching center” (claims 13 and 17 of the ‘491 Patent)		<p>“a switching center that performs the switching functions needed for operation of the subscriber units in a group of cells that the switching center services.”</p> <p>The switching center is a network hub that is responsible for routing packetized data messages to and from subscriber units.</p>	<p>“a switching center that performs the switching functions needed for operation of the subscriber units in a group of cells that the switching center services.”</p> <p>An Internet server—i.e., one that provides for email, social networks, location services, search engines, or other Internet-based services—does not fall within the scope of the term.</p>

In *Eon CorpIP Holdings LLC v. Aruba Networks Inc.*, 62 F. Supp. 3d 942, 968 (N.D. Cal. 2014) (*Sensus I*), Judge Tigar construed this term to mean: “a switching center that performs the switching functions needed for operation of the subscriber units in a group of cells that the switching center services.” *Id.* at 957-58. Although both parties adopt the *Sensus I* construction, each argues additional language is necessary to clarify the scope of the claim. *See, e.g., Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314, 1319 (Fed. Cir. 2016) (courts are required to resolve appropriate disputes “about claim scope” unless the parties’ arguments go to

infringement and not construction). Under Apple's proposal, the network hub switching center cannot be an Internet server. Under EON's proposal, the network hub switching center operates on packetized data. I address each of these limitations in turn.

### 1. Operation on the Internet

Apple argues that EON is precluded from arguing that the network hub switching center could be a "third-party Internet server," because that interpretation was explicitly rejected in *Sensus*. Oppo. 4. Apple contends that, in relation to the meaning of "network hub switching center," *Sensus* decided that: "(1) the claimed 'network' is a 'cellular core network,' and (2) the *Sensus* Court's claim construction 'requires the switching center to be a cellular core network component.'" Oppo. 5. EON contends that Apple's additional language is improper because (1) it is inconsistent with the intrinsic record; (2) it is impermissibly based on Apple's infringement position; and (3) it incorrectly conflates the *Sensus* court's construction of "network hub switching center" with the court's application of that construction at summary judgement. Opening Br. 5-6; Reply 1.

As noted above, I have already concluded that *Sensus* may preclude EON from raising issues that were decided in that case. Dkt. 130. Here, preclusion turns on whether Apple's proposed limitation was "actually litigated" in *Sensus*.<sup>2</sup> I conclude that it was. In the *Sensus* summary judgment order, the court clarified its construction of "network hub switching center" in several ways. First, the court clarified that in its prior claim construction order it "used the word 'network' to mean a cellular core network, 'not something as expansive as the internet.'" *Sensus II*, 36 F. Supp. 3d at 928. Judge Tigar also concluded that "the public switched network is part of the cellular network." *Id.* at 928 (citing the '491 Patent specification). Second, the court rejected EON's contention that "a third-party Internet server may constitute the claimed 'network hub switching center.'" *Id.* Although not part of the *Sensus* court's explicit construction, Judge Tigar adopted these limitations to define the scope of the word "network" in "network hub switching

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<sup>2</sup> The other three issue preclusion factors – that the issues in *Sensus* were disposed of in a final judgment, that they were "actually litigated," and that Eon was a party to *Sensus* – are satisfied for the same reasons as explained in my order granting summary judgment. Dkt. 130.

center.” EON has already attempted to argue that a “network hub switching center” can be an Internet server, and a court has already rejected this contention. EON does not get a second bite at this Apple. Therefore, I conclude that EON is estopped from arguing that a “network hub switching center” can be an Internet server.

EON argues that *Sensus II* made an infringement determination specific to the facts in that case, but did not create a “per se rule” that prevents network hub switching centers from being Internet servers. Reply 1-2. In particular, EON distinguishes *Sensus* on the grounds that the allegedly infringing network hub switching centers in that case were not in the networks of the accused infringers (Sprint and US Cellular). Reply 3. At the claim construction argument, EON similarly argued that Judge Tigar’s construction can only be preclusive as to third-party NHSCs (which Judge Tigar concluded were outside the accused cellular networks), but should not be extended to excluding “the internet” or NHSCs operated by defendant Apple.<sup>3</sup>

In making this argument, EON falls prey to the same mistake of which it accuses Apple: infecting claim construction with infringement contentions. Although Apple’s proposed language is derived from the *Sensus* summary judgment order (which, of course, deals with EON’s infringement contentions), the court’s reasoning in excluding internet servers from its definition of “network” had nothing to do with these contentions. Instead, the court based its reasoning on the intrinsic record, specifically Figure 2 of the ‘491 Patent, which showed the placement of the public switched *network* as being part of the cellular network and, therefore, *network* hub switching centers likewise excluded third-party servers. *Sensus*, 36 F. Supp. 3d at 928.

The *Sensus* court’s conclusion applies not only to the specific infringement dispute before it, but to the meaning of the term generally. As such, it is appropriate here to define “network hub

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<sup>3</sup> At claim construction, EON argued that the portion of the *Sensus* order I rely on was focused on third party networks, as shown by Judge Tigar’s reliance on Figure 2 in the 491 patent to show placement of public switched network. EON argues that Figure 3, which shows the NHSC itself, is more relevant to the question before me. However, Judge Tigar’s reliance on Figure 2 was to show that the “network” at issue was the cellular one used by the patent process, as opposed to third party networks (operated by defendants in *Sensus*). The network limitation would flow to and likewise limit the *Network*HSC, as confirmed by Judge Tigar’s conclusion that “since a third-party server does not fall within the scope of the term ‘network hub switching center,’ EON’s argument fails.” EON is focusing on a distinction without a difference.



switching center” as not including an internet server.<sup>4</sup>

## 2. Packetization

EON argues that the intrinsic record demonstrates that the network hub switching center communicates through a packet-switched network and routes messages. Opening Br. 7. There is support for Eon’s position, ’101 Patent at 7:57-59 (“... messages from the individual subscriber home units 4, (X) longer than 240 bits require several frames, with accumulation into packets ...”). Apple does not dispute that many communication networks (including networks other than the Internet) used packetized data. Apple Br. 7-8. EON’s proposed addition, however, could be read to imply that the NHSC always routes packetized data, a limitation which is not supported. Therefore, I will adopt EON’s proposed language with slight modification.

## 3. Construction

Therefore, “**network hub switching center**” is construed to mean “**a switching center that performs the switching functions needed for operation of the subscriber units in a group of cells that the switching center services. The switching center is a network hub that is responsible for routing data, including packetized data messages, to and from subscriber units. An Internet server—i.e., one that provides for email, social networks, location services, search engines, or other Internet-based services—does not fall within the scope of the term.**”

### B. Conditional Terms

#### 1. “transferring . . . if said at least one subscriber unit is unable to communicate directly with a local base station repeater cell.”

As used:

A two-way communication system comprising:

...

a modem communicatively coupled to said at least one subscriber unit and said network hub switching center for **transferring multiplexed synchronously related digital data messages of variable lengths between said at least one subscriber unit and**

<sup>4</sup> Apple objects to evidence submitted with EON’s reply regarding the NHSCs, including dictionary definitions and excerpts of the deposition testimony of Apple’s expert, Dr. Kevin J. Negus. Dkt. No. 188. EON argues its reliance on this evidence was appropriate given the arguments made by Apple in Apple’s claim construction statement. Dkt. No. 189. In construing the term at issue, I have considered but do not rely on EON’s reply evidence.



said network hub switching center if said at least one subscriber unit is unable to communicate directly with a local base station repeater cell, said modem also adapted for communicating with said local base station repeater cell if communication therebetween is not otherwise prevented.

Patent/Term	EON's Proposal	Apple's Proposal
"transferring . . . if said at least one subscriber unit is unable to communicate directly with a local base station repeater cell" (claim 13 of the '491 Patent)	<p>"transferring . . . if said local subscriber units are unable, for some reason other than the user intentionally disabling said unit, to directly communicate with said local base station repeater cell." The method is binary, meaning that the subscriber unit either communicates with the local base station or the modem, but does not communicate the same data over both paths at the same time.</p> <p>The transferring function of the modem is conditioned on whether the subscriber unit is unable to directly communicate with the local base station repeater cell.</p>	<p>"transferring . . . if said local subscriber units are unable, for some reason other than the user intentionally disabling said unit, to directly communicate with said local base station repeater cell." The system is binary, meaning the subscriber unit either communicates directly with the local base station repeater cell or the modem, but not both.</p> <p>The "transferring function" of the modem is conditioned on whether the subscriber unit is unable to directly communicate with the local base station repeater cell.</p>

**2. "if said subscriber unit" is or is not "receiving signal from said local base station repeater cell"**

As used:

A method of communicating between a subscriber unit and a network hub switching center in a two-communication system comprising the steps of:  
determining whether a subscriber unit located with a base station geographic area associated a said local base station repeater cell is receiving a signal from said local base station repeater cell;  
if said subscriber unit is receiving a signal from said local base station repeater cell, performing the steps of:

...  
 if said subscriber unit is not receiving a signal from said local base station repeater cell, performing the steps of:  
 ....

Patent/Term	EON's Proposal	Apple's Proposal
<p>"if said subscriber unit is receiving a signal from said local base station repeater cell . . ." (claim 17 of the '491 Patent)</p> <p>"if said subscriber unit is not receiving a signal from said local base station repeater cell . . ." (claim 17 of the '491 Patent)</p>	<p>The method steps listed after "if said subscriber unit is not receiving a signal from said local base station repeater cell, performing the steps of" are not performed if the subscriber unit is receiving a signal from said local base station repeater cell. Using the modem to communicate regardless of whether there is signal reception does not fall within the scope of the claim.</p> <p>The method is binary, meaning that the subscriber unit either communicates with the local base station or the modem, but does not communicate the same data over both paths at the same time.</p>	<p>The method steps listed after "if said subscriber unit is not receiving a signal from said local base station repeater cell, performing the step of" are not performed if the subscriber unit is receiving a signal from said local base station repeater cell. Using the modem to communicate regardless of whether there is signal reception does not fall within the scope of the claim.</p> <p>The method is binary, meaning the subscriber unit either communicates directly with the local base station repeater cell or the modem, but not both.</p>

The *Sensus* court construed these "conditional if" terms together. *Sensus*, 62 F. Supp. 3d at 961-966. Over EON's objection, Judge Tigar adopted a "binary limitation," clarifying that the claims recite a communication pathway that is an "either/or proposition" *id.*, at 963, 965, and a "conditional limitation," clarifying that the claim scope extends only to situations in which the condition of being unable to communicate currently exists. *Id.* The court also adopted a "user intervention" limitation (for claim 13), clarifying that the inability to communicate occurred for some reason other than the user intentionally disabling the unit. *Id.* 964.

1 Here, with respect to the “transferring ... if” term of claim 13, Apple’s proposal is a  
2 verbatim adoption of the *Sensus* construction, with the addition of “but not both” to reflect that the  
3 binary limitation of the claim does not allow for the subscriber unit to communicate over two  
4 paths at the same time. EON’s proposed addition goes the other way and seeks to add “but does  
5 not communicate the same data over both paths at the same time.” EON’s proposal would allow  
6 different data to be sent over both paths at the same time. That would defeat the “binary  
7 limitation” repeatedly recognized by Judge Tigar and is not appropriate here. Apple’s additional  
8 language provides additional clarification and is fully consistent with the *Sensus* construction.

9 With respect to the method language, as above, Apple’s proposed addition simply makes  
10 clear that the method is binary and the binary limitation does not allow for the subscriber unit to  
11 communicate over two paths at the same time. Apple’s clarification, unlike EON’s proposed  
12 addition, is consistent with the *Sensus* court’s constructions and will be adopted.

13 The “**transferring if**” language from Claim 13 is construed as: “**transferring . . . if said**  
14 **local subscriber units are unable, for some reason other than the user intentionally disabling**  
15 **said unit, to directly communicate with said local base station repeater cell.**” The system is  
16 **binary, meaning the subscriber unit either communicates directly with the local base station**  
17 **repeater cell or the modem, but not both. The “transferring function” of the modem is**  
18 **conditioned on whether the subscriber unit is unable to directly communicate with the local**  
19 **base station repeater cell.**

20 The method steps following “**if**” from Claim 17 are construed as: **The method steps listed**  
21 **after “if said subscriber unit is not receiving a signal from said local base station repeater**  
22 **cell, performing the step of” are not performed if the subscriber unit is receiving a signal**  
23 **from said local base station repeater cell. Using the modem to communicate regardless of**  
24 **whether there is signal reception does not fall within the scope of the claim. The method is**  
25 **binary, meaning the subscriber unit either communicates directly with the local base station**  
26 **repeater cell or the modem, but not both.**

C. “determining whether a subscriber unit . . . is receiving a signal from said local base station repeater cell”

As used:

A method of communicating between a subscriber unit and a network hub switching center in a two-communication system comprising the steps of:

**determining whether a subscriber unit located with a base station geographic area associated a said local base station repeater cell is receiving a signal from said local base station repeater cell;**

if said subscriber unit is receiving a signal from said local base station repeater cell, performing the steps of:

...

if said subscriber unit is not receiving a signal from said local base station repeater cell, performing the steps of:

....

Patent/Term	EON’s Proposal	Apple’s Proposal
“determining whether a subscriber unit located with a base station geographic area associated a said local base station repeater cell is receiving a signal from said local base station repeater cell” (claim 17 of the ‘491 Patent)	The step of determining may be performed by the subscriber unit or the network, but not by the human end user of the subscriber unit.	The step of “determining” is performed by the subscriber unit, not an end user.

The parties agree that the “determining” cannot be done by a human “user.” The question is whether the claim includes determining by the network or is limited to determining by the subscriber unit. In *Sensus*, EON argued – to overcome a prior finding of indefiniteness – that various components *in the subscriber unit* were disclosed as helping gather information about signal strength and determining ability to receive a signal. *Sensus I*, 62 F. Supp. 3d at 950. Apple contends that EON wants to walk away from that argument and broaden its position on which parts of its system are involved in “determining” process. EON argues that the “hand off” function described in the ‘101 Patent at 8:31-33, 9:4-11 (“the base station repeater cell 3 may initiate the hand-off[;] . . . a signal strength (RSSI) measurement may serve as a criterion for handoff, with the cell directing the subscriber into a set-up routine when signals below a threshold, -80dBm for example, are encountered.”) is intrinsic evidence showing that the network can be

involved in the determining step. Mot. 11-12. In opposition Apple points out that the “hand off” functionality is expressly described as being performed by the base stations (even if “directed” by the cell) and no mention of “network” involvement is found. In reply, EON points again to the ’101 Patent at 9:7-11, which contemplates the cell playing “some role” in the determining process. *Id.*, (“Thus a signal strength (RSSI) measurement may serve as criterion for hand-off, with the cell directing the subscriber into a set-up routine when signals below a threshold, —80dBm for example, are encountered.”).

At the claim construction argument, Apple expressed concern that EON’s argument – that while the subscriber unit may perform the determining step “other network elements” are not necessarily excluded from playing a role – is an attempt to preserve some role for the end “user.” Both sides had agreed that any role of a *human* user has been excluded by *Sensus*. For purposes of claim construction, I do not see a need to resolve whether components other than subscriber units are involved in “determining,” as long as it is clear that a *human* user is not involved in that step.

Therefore, “**determining whether a subscriber unit . . . is receiving a signal from said local base station repeater cell**” is construed as: **the step of “determining” can be performed by the subscriber unit, but not by the human end user of the subscriber unit.**

**D. “switching means for selecting a communication path within said network”**

As used:

A two-way communication system comprising:  
at least one subscriber unit disposed within a predetermined base station geographic area, said at least one subscriber unit including  
**switching means for selecting a communication path within said communication system . . . .**

Patent/Term	EON’s Proposal	Apple’s Proposal
“switching means for selecting a communication path within said communication system” (claim 13 of the ‘491 Patent)	Function: “selecting a communication path”  Structure: electronic switch 13 and equivalents.	Function: “selecting a communication path,” which is a fairly narrow function akin to “toggling,” or “assuming a position.”  Structure: An electronic switch 13, which merely toggles

		between the two paths on the basis of determinations performed entirely by the subscriber unit and, as such, there is no room left for a human user to be part of the claimed system.
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On EON's motion for reconsideration, the *Sensus* court determined that the structure for "switching means" (a means-plus-function claim) was adequately supported in the specification by Figure 2 in subscriber unit 12, an electronic switch [13], which worked with other specified functions in the subscriber unit to perform the function. *Sensus I*, 62 F. Supp.3d at 950. On summary judgment, Judge Tigar concluded based upon his constructions that "if the 'determining' processes are performed entirely by the subscriber unit, and the 'electronic switch' merely toggles between the two paths on the basis of those determinations, there is no room left for a human user to be part of the claim system." *Sensus II*, 36 F. Supp. 3d at 923.

Apple, in its proposed construction, wants me to adopt Judge Tigar's determination as to scope as determined on summary judgment in *Sensus*, and make clear that the identification of structure for switching means in the '101 Patent leaves no room for human involvement. EON's competing proposal is limited to the identification of the electronic switch [13] and "its equivalents." EON clarified at the hearing that it does not object to the "toggling" language but objects to Apple's proposed "determining" language and exclusion of human involvement. I conclude that, at this juncture, it is not necessary to address whether the patent claims leave room for human involvement in the selection of a communication path. The use of "toggling" to define the terms is sufficient to provide guidance to the jury. I also agree, however, that EON's "and equivalents" language is neither necessary nor appropriate as no other "equivalent" structures have been identified.

Therefore, the function is: **"selecting a communication path," which is a fairly narrow function akin to "toggling," or "assuming a position."** The structure is: **An electronic switch 13.**

**E. “a modem communicatively coupled to said at least one subscriber unit and said network hub switching center.”**

As used:

A two-way communication system comprising:

...

**a modem communicatively coupled to said at least one subscriber unit and said network hub switching center** for transferring multiplexed synchronously related digital data messages of variable lengths between said at least one subscriber unit and said network hub switching center . . . .

Patent/Term	EON’s Proposal	Apple’s Proposal
“a modem communicatively coupled to said at least one subscriber unit and said network hub switching center” (claim 13 of the ‘491 Patent)	<p>“A modem is connected to the local subscriber unit and the network hub switching center for the purpose of communications between the two.”</p> <p>The term “coupled” within the context of the ‘491 Patent does not require a physical connection. Likewise, the term “connected” in the construction does not require a physical connection. This construction does not imply that a “connection” must occur in a circuit switched rather than a packet switched network.</p>	<p>A modem is connected to the local subscriber unit and the network hub switching center for the purpose of communications between the two.”</p> <p>The term “coupled” within the context of the ‘491 patent, requires a connection, not merely the capability of such a connection.</p>

The *Sensus* court construed this term as “a modem is connected to the local subscriber unit and the network hub switching center for the purpose of communications between the two.” 62 F.Supp. 3d at 954-55. In doing so, Judge Tigar agreed with Apple that “[t]he term ‘coupled,’ within the context of the patent, requires a connection, not merely the capability of such a connection.” *Id.* at 954. But Judge Tigar also declined to adopt Apple’s proposed language because Apple’s proposal implied “a spatially or geographically specific type of connection that is not reflected in the intrinsic record.” *Id.* at 955. By declining to adopt Apple’s language, Judge



Tigar also attempted to “assuage” EON’s concern that Apple’s proposed construction implied a physical connection (*e.g.*, a wire or cable). *Id.* As the parties suggest that Judge Tigar’s construction should be clarified to explicitly include both of these explanations (connection required but it does not have to be a physical connection), those suggestions are adopted.

EON’s attempt to take that construction a step further and discuss the “implications” for circuit versus packet switched networks is not necessary.

Therefore, **a modem communicatively coupled to said at least one subscriber unit and said network hub switching center** is construed as: **A modem is connected to the local subscriber unit and the network hub switching center for the purpose of communications between the two.”** The term “coupled” within the context of the ‘491 patent, requires a connection, not merely the capability of such a connection. The term “coupled” within the context of the ‘491 patent, does not require a wired connection.

## II. ‘101 PATENT

### A. “subscribers with portable subscriber units”

As used:

An interactive video data system comprising:  
**subscribers with portable subscriber units** and facilities for communicating from the subscriber units when moved through different geographic zones, and  
 a set of subscriber units limited to digital processing facilities comprising digital transducers and means for transmitting digital data derived by said transducers.

Patent/Term	EON’s Proposal	Apple’s Proposal
“subscribers with portable subscriber units” (claim 19 of the ‘101 Patent)	Subscribers can be persons, entities, organizations, corporations, companies, partnerships, or any other association, or machine or apparatus associated with or incorporating a subscriber unit.	Persons using the portable subscriber units.

The parties agree that “subscribers” can be persons using portable subscriber units. However, under EON’s definition, a subscriber can also be: (i) an association, such as an

1 organization, corporation, or company; or (ii) a machine or apparatus. After reviewing the claims,  
2 specification, and prosecution history, I find little support for Apple's contention that subscribers  
3 must be persons.

4 Several passages of the '101 Patent acknowledge the possibility of subscribers being non-  
5 person entities. For instance, the specification describes a base station as serving "a gridwork of  
6 receiver sub-cell sites distributed at locations permitting reliable response by subscribers  
7 transmitting with milliwatt signal levels in the FCC authorized 218-219 MHz band." '101  
8 Patent at 4:4-5. The statement suggests that a subscriber is a machine because humans cannot  
9 transmit signals in the 218-219 MHz band. In addition, the specification describes FIG. 6B as a  
10 system flow diagram "for transmitted messages between local subscribers[,] the cell data center  
11 and the satellite connected network of cell sites." '101 Patent at 4:46-51. Here again, a  
12 "subscriber" would seem to be a machine because it exchanges messages with a "cell data center"  
13 and a "satellite connected network." In view of the specification, a person having ordinary skill in  
14 the art would understand the term "subscribers" to include more than simply human persons.  
15 EON Ex. F ¶ 29 ("Kesan Declaration").

16 Apple argues that the language of claim 19 limits "subscribers" to persons. Oppo. 19. For  
17 instance, Apple contends that the word "with" in the phrase "subscribers with portable subscriber  
18 units" indicates a possessory relationship that would only make sense if "subscribers" were  
19 persons. *Id.* But even assuming that the subscriber units are possessed by subscribers, this does  
20 not preclude EON's construction. For example, I see no reason why an association or machine  
21 could not possess a subscriber unit. Apple further argues that because claim 19 recites subscriber  
22 units that are "moved through different geographic zones," an animate subscriber must exist to  
23 move the inanimate subscriber units. *Id.* But this again improperly reads into the claim  
24 limitations that do not exist. In sum, the language of claim 19 does not justify limiting  
25 "subscribers" to persons. *See 3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315  
26 (Fed. Cir. 2013) ("[A]bsent other limiting circumstances, a patentee is entitled to the full breadth  
27 of claim scope supported by the words of the claims and the written description." (citations  
28 omitted)).

Apple also contends that use of the term “subscribers” in the specification suggests that they are human users and not computer components. *Oppo*. 19. Apple relies on ’101 Patent 5:31-39 and ’101 Patent 10:20-28. *Id.* At best, these passages can be read to suggest that a subscriber may, in some cases, be a human person. But neither of these passages suggests that a subscriber must be a human person. Apple also argues that the portions of the specification relied on by EON use the term “subscriber 4” as a shorthand for a “subscriber unit 4” or a “subscriber video station.” *Id.* 19-20. But even assuming this is true and the relevant passages refer to subscriber units, Apple has not identified anywhere in the specification that explicitly limits the term “subscriber” to human persons. *See Brookhill-Wilk I, LLC. v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1301 (Fed. Cir. 2003) (“Absent a clear disclaimer of particular subject matter, the fact that the inventor anticipated that the invention may be used in a particular manner does not limit the scope to that narrow context.”).

Apple further contends that EON conceded to Apple’s definition of “subscribers” during prosecution. *Oppo*. 19. Apple relies on EON’s statement during reexamination that “[s]ubscribers are users which use the portable subscriber devices.” Apple Ex. 7 at 3. But prosecution history disclaimer does not apply where the alleged disavowal is ambiguous, or even amenable to multiple reasonable interpretations. *Avid Tech., Inc. v. Harmonic, Inc.*, 812 F.3d 1040, 1045 (Fed. Cir. 2016) (citations and quotations omitted). EON’s statements do not foreclose a broad reading of “subscribers” because organizations and machines can also “use” (in the ordinary meaning of the term) portable subscriber devices. Because the relied-upon statement is not an unambiguous disavowal, it cannot be used to limit claim scope.

Accordingly, for the phrase **subscribers with portable subscriber units**, subscribers are: **persons, entities, organizations, corporations, companies, partnerships, or any other association, or machine or apparatus associated with or incorporating a subscriber unit.**

**B. “facilities for communicating from the subscriber units when moved through different geographic zones”**

As used:

An interactive video data system comprising:  
subscribers with portable subscriber units and **facilities for communicating from the subscriber units when moved through**

**different geographic zones, and**  
a set of subscriber units limited to digital processing facilities comprising digital transducers and means for transmitting digital data derived by said transducers.

Patent/Term	EON's Proposal	Apple's Proposal
"facilities for communicating from the subscriber units when moved through different geographic zones" (claim 19 of the '101 Patent)	<p>Function: "communicating from the subscriber units when moved through different geographic zones."</p> <p>Structure: Subscriber units 4, 4', 4", or 4''' (Figs. 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and '101 Patent 8:15-62, 9:14-19, and statutory equivalents.</p>	<p>Function: "communicating from the subscriber units when moved through different geographic zones."</p> <p>Structure: Subscriber units 4, 4', 4", or 4''' (Figs. 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and '101 Patent 8:15-62, 9:14-19.</p>

The debate here is over EON's proposed inclusion of "and statutory equivalents." While "a determination of corresponding structure is a determination of the meaning of the 'means' term in the claim and is thus [] a matter of claim construction," *Chiuminatta Concrete Concepts v. Cardinal Indus. Inc.*, 145 F.2d 1303, 1308 (Fed. Cir. 1998), "the scope of literally infringing 'equivalents' under § 112[f] is a factual determination' best reserved for a later stage of the litigation." *Northpeak Wireless LLC v. 3Com Corp.*, No. 09-cv-00602-SI, 2015 WL 5117020, at \*7 fn. 6 (N.D. Cal. Aug. 28, 2015) (citing *Symbol Techs, Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1575 (Fed. Cir. 1991)).

I agree with Apple. The purpose of claim construction is to identify the structures; what may be equivalent to those structures is a fact question for the jury.

Therefore, the function is: **"communicating from the subscriber units when moved through different geographic zones."** The structure is: **Subscriber units 4, 4', 4", or 4''' (Figs.**

1 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54  
 2 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and '101 Patent  
 3 8:15-62, 9:14-19.

4 C. “subscriber units limited to digital processing facilities . . . digital transducers”  
 5 and “digital transducers”

6 As used:

7 An interactive video data system comprising:  
 8 subscribers with portable subscriber units and facilities for  
 9 communicating from the subscriber units when moved through  
 10 different geographic zones, and  
 11 a set of **subscriber units limited to digital processing facilities**  
 12 **comprising digital transducers and means for transmitting**  
 13 **digital data derived by said transducers.**

Patent/Term	EON’s Proposal	Apple’s Proposal
“subscriber units limited to digital processing facilities comprising digital transducers and means for transmitting digital data derived by said transducers” (claim 19 of the ‘101 Patent)	No construction necessary; plain and ordinary meaning as explained in <i>EON v. Landis+Gyr Inc.</i> , No. 6:11-cv-317, Dkt. No. 249 (EDTX).	Subscriber units restricted to digital processing facilities, and not including components operating in analog. The digital processing facilities include digital transducers and means for transmitting digital data derived by said transducers.

14 Apple’s construction of this term generally tracks the claim language but explicitly  
 15 excludes the subscriber units from “including components operating in analog.” EON contends  
 16 that no construction is needed, or alternatively, that the term should take its plain and ordinary  
 17 meaning as explained in *Eon Corp. IP Holdings, LLC v. Landis±Gyr Inc.*, No. 6:11-CV-0015-  
 18 LED-JDL, 2012 WL 5874625, at \*7 (E.D. Tex. Nov. 20, 2012) (“Landis”) *rev’d on other grounds*,  
 19 *Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314 (Fed. Cir. 2016).

20 This claim construction dispute warrants resolution. “When the parties raise an actual  
 21 dispute regarding the proper scope of these claims, the court . . . must resolve that dispute.” *O2*  
 22 *Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008). Here, an  
 23 actual dispute exists as to whether “digital processing facilities” can or cannot include  
 24

“components operating in analog.” Leaving this question unanswered would impermissibly delegate the task of determining claim scope to the jury.<sup>5</sup>

I conclude that “components operating in analog” should not be excluded from the recited “digital processing facilities.” Apple contends that the claim’s phrase “limited to digital processing facilities” inherently cannot include analog processing. *Oppo*, 22. This exclusion of analog processing might have been compelling if the subscriber units were simply “limited to digital processing.” However, claim 19 recites “digital processing *facilities*” (emphasis added). Apple has provided no authority for the contention that digital processing facilities cannot include any analog components whatsoever. For example, Apple does not identify any passage of the specification that clearly excludes analog components from the digital processing facilities. *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001) (in order for the specification to narrow the scope of a claim, the specification must “make[] clear that the invention does not include a particular feature.”). Absent such a showing, to the term “digital processing facilities” is entitled to its full breath. *See 3M Innovative Properties*, 725 F.3d at 1333.

Therefore, “**subscriber units limited to digital processing facilities comprising digital transducers and means for transmitting digital data derived by said transducers**” are defined as: “**Subscriber units restricted to digital processing facilities, which may include components operating in analog. The digital processing facilities include digital transducers and means for transmitting digital data derived by said transducers.**”

#### D. Digital Transducers

Patent/Term	EON’s Proposal	Apple’s Proposal
“digital transducers” (claim 19 of the ‘101 Patent)	A device that measures physical quantities and	A device that measures physical quantities and

<sup>5</sup> *See Silver Springs*, 815 F.3d at 1319 (holding that the district court’s decision not to construe two claim terms was legal error because doing so failed to resolve the parties’ dispute regarding the scope of the terms). Notably, *Silver Springs* reversed the *Landis* court’s decision to give two terms (neither of which is at issue in the present case) their “plain and ordinary meaning.” The terms at issue in this case were not construed by *Silver Springs*.

	transmits the information as coded digital signals rather than as continuously varying current or voltages, i.e., analog signals.	transmits the information as coded digital signals rather than as continuously varying currents or voltages.
	A “digital transducer,” as used in the claims does not preclude a transducer that measures quantities in analog format, and then converts those analog signals to digital signals for transmission.	

The parties both adopt the basic definition of “digital transducer” provided in the *McGraw-Hill Dictionary of Scientific and Technical Terms Fourth Edition*. Nagdev Ex. 6 at 5 [Dkt. No. 186-7]. Apple’s proposed construction matches the dictionary definition, whereas EON’s proposed construction includes additional description, matching the construction provided in *Landis*, 2012 WL 5874625, at \*9.

Ultimately, I find little practical difference between the parties’ proposed constructions. At bottom, both Apple and EON agree that a transducer is an apparatus that measures some physical quantity and outputs a digital signal. None of the additional verbiage in EON’s proposed construction significantly changes the meaning of the McGraw definition. For instance, the phrase “i.e., analog signals” serves to define “analog signals” as “continuously varying current or voltages” but does not appear to modify the definition of the “device” itself. The additional sentence “[a] “digital transducer” . . . transmission” is only meaningful insofar as it clarifies that an analog signal is a “physical quantit[y]” that can be measured by a transducer, but this is not inconsistent with Apple’s construction. Given the essentially identical meanings adopted by the parties, I conclude that EON’s much longer construction would only serve to confuse the jury. *See Control Res., Inc. v. Delta Elecs., Inc.*, 133 F. Supp. 2d 121, 127 (D. Mass. 2001) (“In the end, claim construction must result in a phraseology that can be taught to a jury of lay people.”).



Accordingly, a “**digital transducer**” is defined as: “**A device that measures physical quantities, which may include analog signals, and transmits the information as coded digital signals rather than as continuously varying currents or voltages.**”

**E. “means for transmitting digital data derived by said transducers.”**

As used:

An interactive video data system comprising:  
 subscribers with portable subscriber units and facilities for communicating from the subscriber units when moved through different geographic zones, and  
 a set of subscriber units limited to digital processing facilities comprising digital transducers and **means for transmitting digital data derived by said transducers.**

Patent/Term	EON’s Proposal	Apple’s Proposal
“means for transmitting digital data derived by said transducers” (claim 19 of the ‘101 Patent)	<p>Function: transmitting digital data derived by said transducers.</p> <p>Structure: transceiver 50 (FIG. 9A) as described at ‘101 Patent 10:9-13 and transceiver 4 (FIG. 2) as described at ‘101 Patent 5:59-66, and statutory equivalents.</p>	<p>Function: “transmitting digital data derived by said transducers”</p> <p>Structure: Transceiver 50 (FIG. 9A) as described at ‘101 Patent 10:9-13, which states that “[t]he transceiver 50 permits two way wireless communications in the 218-219 MHz bands set forth in FIG. 8, and compatible with the functions hereinbefore set forth such as in connection with FIG. 6A,” and transceiver 4 (FIG. 2) as described at ‘101 Patent 5:59-66, which states “[t]ransceiving subscriber units X 4, 4’, etc. located within the subdivided response zones 22 communicate with the local remote receivers 20 over a significantly reduced transmission</p>

		path distance within the subdivided response areas 22, as compared with direct transmission from a local base station repeater cell [to] transceiving subscriber units X 4, 4'."
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The parties dispute whether “and statutory equivalents” should be included in the definition. As I held earlier in this Order, it should not. The only other dispute is over Apple’s inclusion of the *descriptions* of the structures that both sides agree disclose the means in this means-plus-function claim. Apple argues that including this descriptive language (quoted directly from the patent) is necessary to prevent EON from arguing that the frequency limitations in those disclosed structures should not apply. Apple Br. at 25. However, the identification of the structures by reference to specific portions of the patent suffices at this juncture.

Therefore, the function is: **transmitting digital data derived by said transducers**. The structure is: **transceiver 50 (FIG. 9A) as described at '101 Patent 10:9-13 and transceiver 4 (FIG. 2) as described at '101 Patent 5:59-66**.

### CONCLUSION

The terms are construed as follows:

#### ‘491 Patent

“**network hub switching center**” is construed to mean “**a switching center that performs the switching functions needed for operation of the subscriber units in a group of cells that the switching center services. The switching center is a network hub that is responsible for routing data, including packetized data messages, to and from subscriber units. An Internet server—i.e., one that provides for email, social networks, location services, search engines, or other Internet-based services—does not fall within the scope of the term.**”

The “**transferring if**” language from Claim 13 is construed as: “**transferring . . . if said local subscriber units are unable, for some reason other than the user intentionally disabling**

1 said unit, to directly communicate with said local base station repeater cell.” The system is  
2 binary, meaning the subscriber unit either communicates directly with the local base station  
3 repeater cell or the modem, but not both. The “transferring function” of the modem is  
4 conditioned on whether the subscriber unit is unable to directly communicate with the local  
5 base station repeater cell.

6 The method steps following “if” from Claim 17 are construed as: The method steps listed  
7 after “if said subscriber unit is not receiving a signal from said local base station repeater  
8 cell, performing the step of” are not performed if the subscriber unit is receiving a signal  
9 from said local base station repeater cell. Using the modem to communicate regardless of  
10 whether there is signal reception does not fall within the scope of the claim. The method is  
11 binary, meaning the subscriber unit either communicates directly with the local base station  
12 repeater cell or the modem, but not both.

13 “determining whether a subscriber unit . . . is receiving a signal from said local base  
14 station repeater cell” is construed as: the step of “determining” can be performed by the  
15 subscriber unit, but not by the human end user of the subscriber unit.

16 For “switching means for selecting a communication path within said network,” the  
17 function is: “selecting a communication path,” which is a fairly narrow function akin to  
18 “toggling,” or “assuming a position.” The structure is: An electronic switch 13.

19 “a modem communicatively coupled to said at least one subscriber unit and said  
20 network hub switching center” is construed as: A modem is connected to the local subscriber  
21 unit and the network hub switching center for the purpose of communications between the  
22 two.” The term “coupled” within the context of the '491 patent, requires a connection, not  
23 merely the capability of such a connection. The term “coupled” within the context of the  
24 '491 patent, does not require a wired connection.

#### 25 26 ‘101 Patent

27 For the phrase “subscribers with portable subscriber units,” subscribers are: persons,  
28 entities, organizations, corporations, companies, partnerships, or any other association, or

**machine or apparatus associated with or incorporating a subscriber unit.**

For “**facilities for communicating from the subscriber units when moved through different geographic zones,**” the function is: “**communicating from the subscriber units when moved through different geographic zones.**” The structure is: **Subscriber units 4, 4', 4'', or 4''' (Figs. 1, 2, 6A, 7A, 9A), including software control facilities or Software Control Data Processor 54 and the corresponding set-up algorithm to the extent disclosed in Fig. 6B and '101 Patent 8:15-62, 9:14-19.**

“**subscriber units limited to digital processing facilities comprising digital transducers and means for transmitting digital data derived by said transducers**” are defined as:

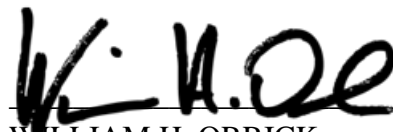
“**Subscriber units restricted to digital processing facilities, which may include components operating in analog. The digital processing facilities include digital transducers and means for transmitting digital data derived by said transducers.**”

A “**digital transducer**” is defined as: “**A device that measures physical quantities, which may include analog signals, and transmits the information as coded digital signals rather than as continuously varying currents or voltages.**”

For the “**means for transmitting digital data derived by said transducers,**” the function is: **transmitting digital data derived by said transducers.** The structure is: **transceiver 50 (FIG. 9A) as described at '101 Patent 10:9-13 and transceiver 4 (FIG. 2) as described at '101 Patent 5:59-66.**

**IT IS SO ORDERED.**

Dated: September 22, 2016



WILLIAM H. ORRICK  
United States District Judge